

**WHAT IS CLAIMED IS:**

1. A method for extracting coding parameters from encoded video data, the method comprising the steps of:

5 decoding at least a substantial portion of said encoded video data in an MPEG decoder and outputting a decompressed video data;

performing a DC computation operation to recover an intra-dc-precision level from said decompressed video data; and,

10 if said intra-dc-precision level is less than a first predetermined threshold, determining that said decompressed video data being processed corresponds to an intra-coded picture.

2. The method of claim 1, further comprising the steps of:

15 if said intra-dc-precision level is equal to said first predetermined threshold, performing a discrete cosine transform (DCT) to produce at least one AC frequency band in said decompressed video data;

calculating a dominant average quantizer step size for the at least one AC frequency band; and,

20 if said average quantizer step size is greater than a second predetermined threshold, determining that said decompressed video data being processed corresponds to an intra-coded picture.

3. The method of claim 1, further comprising the steps of:

extracting quantization matrix data of a frame of said decompressed video data;

and,

extracting a quantizer scale and a DCT type value for each block of said

5 decompressed video data.

4. The method of claim 1, wherein said quantizer scale is calculated by

averaging the AC coefficients in each of said decompressed video data as follows:

$$\overline{C_{i,j}} = \frac{C_{i,j} \times 16}{W_{i,j}},$$

where  $C_{i,j}$  represents the  $(i,j)$ th AC coefficient in current block,  $\overline{C_{i,j}}$  represents the normalized AC coefficient, and  $W_{i,j}$  represents the  $(i,j)$ th quantization matrix.

15 5. The method of claim 2, further comprising the steps of:

extracting quantization matrix data of a frame of said decompressed video data;

and,

extracting a quantizer scale and a DCT type value for each block of said  
decompressed video data.

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6. The method of claim 5, wherein said quantizer scale is calculated by averaging the AC coefficients in each of said decompressed video data as follows:

$$\overline{C_{i,j}} = \frac{C_{i,j} \times 16}{W_{i,j}},$$

where  $C_{i,j}$  represents the  $(i,j)$ th AC coefficient in current block,  $\overline{C_{i,j}}$  represents the normalized AC coefficient, and  $W_{i,j}$  represents the  $(i,j)$ th quantization matrix.

7. The method of claim 1, wherein each of said decompressed video data is divided into blocks.

8. The method of claim 3, wherein said quantization matrix, said quantizer scale, and said DCT type value correspond substantially to coding parameters used in a coding operation that was previously performed on said encoded video data.

9. A method for extracting coding parameters from an encoded digital video signal, the method comprising the steps of:

receiving encoded data of said encoded digital video signal at an MPEG decoder and producing therefrom decoded data comprised of a plurality of blocks;

5 performing a DC computation operation to recover an intra-dc-precision level from said decoded video data;

if said intra-dc-precision level is less than a first predefined threshold, classifying said decoded video data as an intra-coded picture;

10 if said intra-dc-precision level is equal to said first predefined threshold, performing a discrete cosine transform (DCT) on said decoded video data to produce a set of DCT coefficients for at least one AC frequency band;

calculating a quantizer step size for the at least one AC frequency band; and,

classifying said decoded video data as an intra-coded picture if said calculated quantizer step size is greater than a second predefined threshold.

15 10. The method of claim 9, further comprising the steps of:

extracting quantization matrix data of a frame of said decoded video data; and,

extracting a quantizer scale and a DCT type value for each block of said decoded video data.

11. The method of claim 10, wherein said quantizer scale is calculated by averaging the AC coefficients in each of said decompressed video data as follows:

$$\overline{C_{i,j}} = \frac{C_{i,j} \times 16}{W_{i,j}},$$

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where  $C_{i,j}$  represents the  $(i,j)$ th AC coefficient in current block,  $\overline{C_{i,j}}$  represents the normalized AC coefficient, and  $W_{i,j}$  represents the  $(i,j)$ th quantization matrix.

12. The method of claim 10, wherein said quantization matrix, said quantizer scale, and said DCT type value correspond substantially to coding parameters used in a coding operation that was previously performed on said encoded video data.

13. A system for extracting coding parameters from encoded video data comprising:

a decoder for decoding at least a substantial portion of said encoded video data to produce decoded video data comprised of a plurality of blocks;

a computation circuit for performing a DC computation operation to recover an intra-dc-precision level from said decoded video data; and,

a decision circuit for determining whether said decoded video data being processed corresponds to an intra-coded picture.

14. The system of claim 13, further comprising:

a discrete cosine transform (DCT) circuit for generating a set of DCT coefficients for at least one AC frequency band in said decoded video data; and,

a quantization computation circuit for determining a quantizer step size for the at  
5 least one AC frequency band.

15. The system of claim 13, wherein said decoded video data is classified as an intra-coded picture if said intra-dc-precision level is less than a first predetermined threshold.

16. The system of claim 13, wherein said decoded video data is classified as an intra-coded picture if said quantizer step size is greater than a second predetermined threshold.

17. The system of claim 13, further comprising:  
a first extractor for extracting quantization matrix data of a frame of said decoded video data; and,

a second extractor for extracting a quantizer scale and a DCT type value for each block of said decoded video data.

18. The system of claim 14, further comprising:

a first extractor for extracting quantization matrix data of a frame of said decoded video data; and,

a second extractor for extracting a quantizer scale and a DCT type value for each  
5 block of said decoded video data.

19. The system of claim 17, wherein said quantization matrix, said quantizer scale, and said DCT type value correspond substantially to coding parameters used in a coding operation that was previously performed on said encoded video data.

20. A system for extracting coding parameters from an encoded digital video signal, the method comprising the steps of:

a memory for storing a computer-readable code; and,

a processor operatively coupled to said memory, said processor configured to:

receive encoded data of said encoded digital video signal to produce decoded data;

perform a DC computation operation to recover an intra-dc-precision level from said decoded video data;

classify said decoded video data as an intra-coded picture if said intra-dc-precision level is less than a first predefined threshold

perform a discrete cosine transform (DCT) on said decoded video data to produce a set of DCT coefficients for at least one AC frequency band if said intra-dc-precision level is equal to said first predefined threshold,

calculate a quantizer step size for the at least one AC frequency band; and,  
 classify said decoded video data as an intra-coded picture if said quantizer step size  
 is greater than a second predefined threshold.

5           21.     The system of claim 20, wherein said processor is configured further to:  
               extract quantization matrix data of a frame of said decoded video data; and,  
               extract a quantizer size step and a DCT type value for each block of said decoded  
               video data.

10           22.     The system of claim 20, wherein said quantization matrix, said quantizer  
               scale, and said DCT type value correspond substantially to coding parameters used in a  
               coding operation that was previously performed on said encoded video data.